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For: INTEGRATED ACTUATOR MENISCUS MIRROR

1 1. An integrated actuator meniscus mirror comprising:
2 an optical substrate including a mirror surface on one side and a support
3 structure on the other; and
4 a plurality of actuators embedded in said support structure spaced from
5 and generally parallel to said mirror surface for applying bending moments to said mirror
6 surface for controllably altering the shape of said mirror surface.

1 2. The integrated actuator meniscus mirror of claim 1 in which said optical
2 substrate includes an optical material.

1 3. The integrated actuator meniscus mirror of claim 1 in which said optical
2 substrate includes an optical material from the group metals, glasses, ceramics, polymers
3 and composites thereof.

1 4. The integrated actuator meniscus mirror of claim 1 in which said optical
2 substrate includes silicon carbide.

1 5. The integrated actuator meniscus mirror of claim 1 in which said support
2 structure includes an array of intersecting major ribs.

1 6. The integrated actuator meniscus mirror of claim 5 in which each said
2 actuator is mounted in a said major rib between said intersections.

1 7. The integrated actuator meniscus mirror of claim 1 in which said support
2 structure includes cathedral ribs on the back side of said mirror surface.

1 8. The integrated actuator meniscus mirror of claim 6 in which each said rib
2 contains a recess for receiving a said actuator.

1 9. The integrated actuator meniscus mirror of claim 1 in which a said
2 actuator includes an electrostrictive device.

1 10. The integrated actuator meniscus mirror of claim 9 in which said actuator
2 includes a lead magnesium niobate electrostrictive device.

1 11. The integrated actuator meniscus mirror of claim 1 in which said support
2 structure includes an array of spaced posts.

1 12. The integrated actuator meniscus mirror of claim 11 in which each said
2 actuator extends between a pair of said spaced posts.

- 1 13. An integrated actuator meniscus mirror comprising: ✓
- 2 surface for controllably altering the shape of said mirror surface without a
- 3 reaction mass.